What Is Claimed Is:

1. An apparatus for reconfiguring from a first configuration to a second configuration an externally coated work-piece comprising:

a tubular reconfiguration chamber having a plurality of slidably mounted outer walls, the outer walls slidably mounted along individual radial lines emanating from and orthogonal to the central longitudinal axis of the tubular reconfiguration chamber; and

a means for adjusting and maintaining the temperature of the external coating of a work-piece located within the tubular reconfiguration chamber.

2. The apparatus of claim 1 wherein the means for adjusting and maintaining the temperature includes a fluid ejection nozzle in fluid communication with the tubular reconfiguration chamber.

3. The apparatus of claim 1 wherein the means for adjusting and maintaining the temperature is adapted to lower the temperature of the external coating to be within the coating's super-cooled liquid temperature range.

4. The apparatus of claim 1 wherein the means for adjusting and maintaining the temperature is adapted to raise the temperature of the external coating from its preexisting temperature to be within the coating's super-cooled liquid temperature range.

5. The apparatus of claim 1 wherein the tubular reconfiguration chamber has a polygonal cross-section.

6. An apparatus for reconfiguring an externally coated reconfigurable work-piece comprising:

a reconfiguration chamber;

a nozzle in fluid communication with the reconfiguration chamber;

a regulator in fluid communication with the nozzle, the regulator adapted to regulate the flow of a thermal transfer fluid exiting the nozzle; and

a controller in communication with the regulator, the controller adapted to send control signals to the regulator to maintain the surface temperature of the external coating of the reconfigurable work-piece within a predetermined temperature range, the predetermined temperature range associated with a predetermined minimum hardness of the external coating of the reconfigurable work-piece.

7. The apparatus of claim 6 wherein the controller is further adapted to send control signals to the regulator to modify the surface temperature of the external coating of the reconfigurable work-piece to be at least 20 degrees Celsius closer to the external coating's glass transition temperature.

8. The apparatus of claim 6 wherein the controller is further adapted to send control signals to the regulator to modify the surface temperature of the external coating of the reconfigurable work-piece to be at least 10 degrees Celsius closer to the external coating's glass transition temperature.

9. The apparatus of claim 6 wherein the reconfiguration chamber has a polygonal cross-section.

10. The apparatus of claim 6 wherein the nozzle is incorporated into a wall of the reconfiguration chamber and wherein the nozzle is in fluid communication with a thermal transfer fluid storage chamber.